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ME 8: Containerization and Docker

Activity 2

Trying to run **ping** and updating software list

```
PS Y:\wsl\197\ME8_Containerization_and_Docker\1-running_containers> docker run -it ubuntu:16.04 /bin/bash
root@e6bcb28f29bd:/# ping google.com
bash: ping: command not found
root@e6bcb28f29bd:/# apt-get update
Get:1 http://archive.ubuntu.com/ubuntu xenial InRelease [247 kB]
Get:2 http://security.ubuntu.com/ubuntu xenial-security InRelease [109 kB]
Get:3 http://security.ubuntu.com/ubuntu xenial-security/main amd64 Packages [2051 kB]
Get:4 http://archive.ubuntu.com/ubuntu xenial-updates InRelease [109 kB]
Get:5 http://archive.ubuntu.com/ubuntu xenial-backports InRelease [107 kB]
Get:6 http://archive.ubuntu.com/ubuntu xenial/main amd64 Packages [1558 kB]
Get:7 http://archive.ubuntu.com/ubuntu xenial/restricted amd64 Packages [14.1 kB]
Get:8 http://archive.ubuntu.com/ubuntu xenial/universe amd64 Packages [9827 kB]
Get:9 http://security.ubuntu.com/ubuntu xenial-security/restricted amd64 Packages [15.9 kB]
Get:10 http://security.ubuntu.com/ubuntu xenial-security/universe amd64 Packages [984 kB]
Get:11 http://security.ubuntu.com/ubuntu xenial-security/multiverse amd64 Packages [8820 B]
Get:12 http://archive.ubuntu.com/ubuntu xenial/multiverse amd64 Packages [176 kB]
Get:13 http://archive.ubuntu.com/ubuntu xenial-updates/main amd64 Packages [2559 kB]
Get:14 http://archive.ubuntu.com/ubuntu xenial-updates/restricted amd64 Packages [16.4 kB]
Get:15 http://archive.ubuntu.com/ubuntu xenial-updates/universe amd64 Packages [1544 kB]
Get:16 http://archive.ubuntu.com/ubuntu xenial-updates/multiverse amd64 Packages [26.2 kB]
Get:17 http://archive.ubuntu.com/ubuntu xenial-backports/main amd64 Packages [10.9 kB]
Get:18 http://archive.ubuntu.com/ubuntu xenial-backports/universe amd64 Packages [12.7 kB]
Fetched 19.4 MB in 1min 2s (309 kB/s)
Reading package lists... Done
root@e6bcb28f29bd:/#
```

Installing and running ping

```
Preparing to unpack .../libffi6:amd64 (3.2.1-4) ...
Unpacking libffi6:amd64 (3.2.1-4) ...
Selecting previously unselected package libp11-kit0:amd64.
Preparing to unpack .../libp11-kit0_0.23.2-5-ubuntu16.04.2_amd64.deb ...
Unpacking libp11-kit0:amd64 (0.23.2-5-ubuntu16.04.2) ...
Selecting previously unselected package libtasn1-6:amd64.
Preparing to unpack .../libtasn1-6_4.7-3ubuntu0.16.04.3_amd64.deb ...
Unpacking libtasn1-6:amd64 (4.7-3ubuntu0.16.04.3) ...
Selecting previously unselected package libgnutls30:amd64.
Preparing to unpack .../libgnutls30_3.4.10-4ubuntu1.8_amd64.deb ...
Unpacking libgnutls30:amd64 (3.4.10-4ubuntu1.8) ...
Selecting previously unselected package libgnutls-openssl27:amd64.
Preparing to unpack .../libgnutls-openssl27_3.4.10-4ubuntu1.8_amd64.deb ...
Unpacking libgnutls-openssl27:amd64 (3.4.10-4ubuntu1.8) ...
Selecting previously unselected package iputils-ping.
Preparing to unpack .../iputils-ping_3.3a20121221-5ubuntu2_amd64.deb ...
Unpacking iputils-ping (3.3a20121221-5ubuntu2) ...
Processing triggers for libc-bin (2.23-0ubuntu1.2) ...
Setting up libgnutls30:amd64 (3.4.10-4ubuntu1.8) ...
Setting up libnettle6:amd64 (3.2-1ubuntu0.16.04.2) ...
Setting up libhogweed4:amd64 (3.2-1ubuntu0.16.04.2) ...
Setting up libidn11:amd64 (1.32-3ubuntu1.2) ...
Setting up libffi6:amd64 (3.2.1-4) ...
Setting up libp11-kit0:amd64 (0.23.2-5-ubuntu16.04.2) ...
Setting up libtasn1-6:amd64 (4.7-3ubuntu0.16.04.3) ...
Setting up libgnutls30:amd64 (3.4.10-4ubuntu1.8) ...
Setting up libgnutls-openssl27:amd64 (3.4.10-4ubuntu1.8) ...
Setting up iputils-ping (3.3a20121221-5ubuntu2) ...
Setcap is not installed, falling back to setuid
Processing triggers for libc-bin (2.23-0ubuntu1.2) ...
root@e6bcb28f29bd:/# ping google.com
PING google.com (216.58.221.238) 56(84) bytes of data.
64 bytes from 216.58.221.238: icmp_seq=1 ttl=37 time=28.1 ms
64 bytes from 216.58.221.238: icmp_seq=2 ttl=37 time=28.2 ms
64 bytes from 216.58.221.238: icmp_seq=3 ttl=37 time=28.7 ms
^C
--- google.com ping statistics ---
3 packets transmitted, 3 received, 0% packet loss, time 2003ms
rtt min/avg/max/mdev = 28.181/28.399/28.726/0.235 ms
root@e6bcb28f29bd:/#
```

Committing and running the new image

```
root@131cb90e2220: /
PS Y:\wsl\197\ME8_Containerization_and_Docker\1-running_containers> docker ps -a
CONTAINER ID   IMAGE          COMMAND                  CREATED        STATUS        PORTS          NAMES
e6bcb28f29bd   ubuntu:16.04   "/bin/bash"             12 minutes ago Exited (127) 7 minutes ago admiring_lovelace
PS Y:\wsl\197\ME8_Containerization_and_Docker\1-running_containers> docker commit --help

Usage: docker commit [OPTIONS] CONTAINER [REPOSITORY[:TAG]]

Create a new image from a container's changes

Options:
  -a, --author string      Author (e.g., "John Hannibal Smith
                           <hannibal@a-team.com>")
  -c, --change list        Apply Dockerfile instruction to the created image
  -m, --message string     Commit message
  -p, --pause              Pause container during commit (default true)
PS Y:\wsl\197\ME8_Containerization_and_Docker\1-running_containers> docker commit -a 'Kenneth Faurillo' -m 'Installed ping utility' e6bcb kennethfau/ping
sha256:6bb2f36393e48d86e4ba974d10374b0f13f3e38c8e7443b0747839ebc66f43ed
PS Y:\wsl\197\ME8_Containerization_and_Docker\1-running_containers> docker ps -a
CONTAINER ID   IMAGE          COMMAND                  CREATED        STATUS        PORTS          NAMES
e6bcb28f29bd   ubuntu:16.04   "/bin/bash"             12 minutes ago Exited (127) 8 minutes ago admiring_lovelace
PS Y:\wsl\197\ME8_Containerization_and_Docker\1-running_containers> docker images
>>
REPOSITORY    TAG       IMAGE ID       CREATED        SIZE
kennethfau/ping latest    6bb2f36393e4  14 seconds ago 170MB
ubuntu        16.04     9ff95a467e45   5 days ago    135MB
PS Y:\wsl\197\ME8_Containerization_and_Docker\1-running_containers> docker run -it --rm kennethfau/ping bin/bash
root@131cb90e2220:/# ping google.com
PING google.com (172.217.163.238) 56(84) bytes of data:
64 bytes from 172.217.163.238: icmp_seq=1 ttl=37 time=42.4 ms
64 bytes from 172.217.163.238: icmp_seq=2 ttl=37 time=42.0 ms
64 bytes from 172.217.163.238: icmp_seq=3 ttl=37 time=43.5 ms
64 bytes from 172.217.163.238: icmp_seq=4 ttl=37 time=43.4 ms
64 bytes from 172.217.163.238: icmp_seq=5 ttl=37 time=44.6 ms
^C
--- google.com ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4006ms
rtt min/avg/max/mdev = 42.010/43.209/44.612/0.923 ms
root@131cb90e2220:/#
```